Author's response to reviews

Title: Assessment of Left Atrial Volume before and after Pulmonary Thromboendarterectomy in Chronic Thromboembolic Pulmonary Hypertension

Authors:

Nicholas A Marston (nmarston@ucsd.edu)
William R Auger (bauger@ad.ucsd.edu)
Michael M Madani (mmadani@ucsd.edu)
Bruce J Kimura (kimura bruce@scrippshealth.org)
G. Monet Strachan (gstrachan@ucsd.edu)
Ajit B Raisinghani (araisinghani@ucsd.edu)
Anthony N Demaria (ademaria@ucsd.edu)
Daniel G Blanchard (dblanchard@ucsd.edu)

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Author's response to reviews: see over
Referee 1:
http://www.cardiovascularultrasound.com/imedia/1380553411132627_comment.pdf

Major:
1) Express findings better in Results section
   We appreciate the reviewer’s concern, and have rewritten the entire Results section to make it more readable and succinct.

2) Consider adding E/E’ ratio to assess the change in LV preload
   Based on the reviewer's suggestion, we have retrieved all of the mitral annular E/E’ data from the present study population, and have added the information into the Results section and Tables 1 and 2. The current results are similar to a previous study from our institution (J Am Coll Cardiol 2007;49:1334-9), which showed that lateral E/E’ increased significantly after PTE. Both E and E’ increased, but E proportionately more so. We believe this increase in E velocity is consistent with an increase in LV preload.

Minor:
1) Consider adding LA function data such as LA ejection fraction or LA strain.
   We absolutely agree that LA strain imaging before and after PTE would be an interesting study. We are starting a project to assess this, and hope to have data to present soon. Unfortunately, we did not assess LA strain or ejection fraction in the current patient population.
Referee 2:
http://www.cardiovascularultrasound.com/imedia/1861854493132915_comment.pdf

Major:

1) Information about PFO would be interesting as this could impact the LAV.
   Until ~7 years ago, we routinely performed echo bubble studies prior to PTE surgery. The incidence of PFO was quite low, but we had one case where a large PFO led to a surge of bubbles into the LA. This caused a severe TIA that required hyperbaric oxygen treatment. Following this, we discontinued bubble studies, and so do not have this information for the current patient population. Our surgical colleagues report a near-zero incidence of atrial septal defect found during PTE, and a very low incidence of hemodynamically significant PFO.

   We appreciate the reviewer’s curiosity about this, but have found the incidence of PFO in this population to be quite low. We do not believe that interatrial shunting plays any significant role in LAV before or after PTE surgery.

2) Providing E’ data would be useful as it is less load-dependent than E/A pattern.
   If you do not have E’ in the data set, discuss this as a limitation.
   We have assessed E’ in a previous study of chronic thromboembolic pulmonary hypertension (J Am Coll Cardiol 2007;49:1334-9) and found that it increases after PTE. Based on the reviewer’s suggestion, we have retrieved all of the mitral annular E/E’ data from the present study population, and have added the information into the Results sections and Tables 1 and 2. E/E’ increased significantly after PTE (both E and E’ increased, but E proportionately more-so).

3) You might include in your discussion new 2D strain measurements and studies about 2D strain of LA function.
   We absolutely agree that LA strain imaging before and after PTE would be an interesting study. We are starting a project to assess this, and hope to have data to present soon. Unfortunately, we did not assess LA strain in the current patient population and are unable to measure it retrospectively.